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Differentiated instruction and its impact on students' academic writing skills

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Abstract

The study aimed to investigate the impact of differentiated instructional approach on the students' academic writing skill performance. A pretest-posttests quasi-experimental research with a single group interrupted design was employed. Data were obtained through tests and students' reflective journal from 27 third year EFL students who were selected using comprehensive sampling. Moreover, a focus group discussion was held with nine randomly selected students from each of the high, average and low achievers group. Side by side with the interventions, three tests were administered to the sample students weekly. The quantitative data were analyzed using one-way repeated measure ANOVA, and the qualitative data were analyzed qualitatively through describing and narrating their responses. The findings revealed that differentiated instruction was effective on students' academic writing achievements. As a result, this study advises that researchers, instructors, and teacher training institutes give careful consideration to how well the current language instruction fits into today's academically diverse classrooms.

Keywords: Academic writing Skills, Differentiated Instruction, One-size-fits-all

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Introduction

Educators all over the world recognize that students have a variety of learning styles (Tomlinson, 2001). There are several ways that students choose to study and process information. However, the one size-fits-all pedagogical approaches dominated teaching learning in higher education (Ernst & Ernst, 2011). The one-size-fits-all instruction doesn't work effectively due to student diversity in preferences and background knowledge even if they are at the same age (Tomlinson, 2001). Since every learner is unique, there is no one best teaching method or set of materials for teaching and learning (Oxford, 1990). Progress rates may differ in the same group because of variances in student cognitive development, instructional strategies, and teaching materials that all have a substantial impact on academic performance (Dosch & Zidon, 2014).In the Ethiopian education system, teaching diverse groups of students, including EFL classes, with different learning needs and/or readiness levels is primarily dominated by the one-size-fits-all mode of instruction that does not provide sufficient learning opportunities for the diverse groups of students (Abraham et al., 2022; Abraham, 2019; Yirgalem, 2022; Zewude, 2019, 2020). The conventional teaching methods that fail to adequately address the unique needs of diverse students are the mainstay of the Ethiopian educational system when it comes to teaching diverse groups of students at all levels, including English as a foreign language (EFL) classes with varying learning needs and/or readiness levels (Dosch & Zidon, 2014; MoE, 2018).

As students come to higher education with a wide array of differences such as interests, academic readiness, learning profiles and learning styles, using one-size-fits-all teaching style may no longer meets the needs of all students (Abraham et al., 2022; Chamberlin & Powers, 2010; Dosch & Zidon, 2014; Ernst & Ernst, 2011; Pham, 2012; Santangelo & Tomlinson, 2009; Solomon, 2019). Since the one-size-fits-all teaching instruction targets the average students, students who are advanced academically left behind because they are unchallenged, and students who may be struggling are left frustrated and confused (Stavroula, 2011; Tomlinson, 2009). It also widens the achievement gaps between individuals in the existing groups (Hall, 2002; Koeze, 2007; Subban, 2006). Despite the proven argument that student learn differently (Fischer & Rose, 2001; Green, 1999) the one-size-fits-all teaching method is predominantly used in all classes including EFL classes. One of the main causes of academic failures in mixed-ability classes is the reliance on

conventional teaching methods, which do not foster the growth of knowledge and skills for all students (Abraham et al., 2022; Bantalem, 2021; Dosch & Zidon, 2014; Santangelo & Tomlinson, 2009; Solomon, 2019; Santangelo & Tomlinson, 2009; Valiande et al., 2011).

To ensure that every student succeeds, teachers must identify instructional approaches and/or strategies that enable them to meet the unique needs of each individual student. Differentiated instruction has been suggested (Tomlinson, 2009) as an innovative way to meet the variations in students' learning profiles, interests, and learning profiles. Differentiated instruction (DI thereafter) is an alternative to the one-size-fits all instruction, is a pedagogical approach to teach students who are different in their readiness levels, interests, pace or rate of learning and learning profiles within the same classroom (Tomlinson, 2003).

Differentiated instruction is a composite theory shaped from various educational theories apart from the explicit philosophical frameworks, Dewey's (1938) progressive education theory, Vygotsky's (1978) social constructivist theory (zone of proximal development), and Gardner's (2011) multiple intelligence theories were the most dominants, which provide the conceptual framework for this study. According to Dewey (1938), learning is most effective when it is centered on each student's unique interests, skills, and habits. Similarly, Vygotsky (1978) maintained that instruction should occur inside the learner's zone of proximal development (ZPD), which is the gap between the learner's current performance and their working potential when supported by elders. Similarly, Gardner (2011) maintained that learning occurs most effectively when the curriculum is tailored to the student's dominant intelligence. Consequently, each of these has contributed a lot to the theory of differentiated instruction. However, the theory of DI is based mainly on the theory of social constructivism (Vygotsky, 1978) and emphasizes the active participants of students in the learning process where the construction of knowledge emerges due to the interactions of students with their environment (other students, teachers, knowledge, educational materials etc.).

To accommodate the diversity of learners, educators can use instructional strategies like curriculum compacting, tiered assignments, flexible grouping, scaffolding, learning contracts, and interest groups to differentiate instruction (content, process, product, and environment) based on students' learning profiles, interests, and readiness levels (Tomlinson, 2003). Teachers can promote equity and success in the classroom by customizing excellent resources, procedures, and end

products to each student's readiness level, interests, and learning profile. By employing differentiated teaching, teachers can assist students in improving their writing and other academic achievements. Students require a starting point of some sort before they can write; this could be an idea, a discussion, an observation, reading, playing, or any other initial spark that ignites the creative spark. A basic educational principle states that new information must be built upon previously learned information obtained from prior experiences and abilities (Tomlinson & David, 2011). Differentiated instruction in the framework of social constructivism could be the solution to the problem of academic failure between teaching instruction and students' academic needs in mixed-ability classrooms. Therefore, the current study has tried to see the impact of DI on students' writing skills at university level.

Differentiated Studies and Academic Achievements

Several studies have shown positive outcomes from the use of differentiated instruction (Chien,2014; Dixon et al., 2014; McAdamis, 2001; Mazen & Malak, 2019; Valiandes, 2015; Koeze, 2007; Santangelo & Tomlinson, 2009; Chamberlin & Powers, 2010, Savage, 2011; Rodriguez, 2012; Lightweis, 2013); nevertheless, few studies looked at the effectiveness of differentiation at a higher educational levels (Mazen & Malak, 2019; Chamberlin & Powers, 2010; Chien, 2014; Dosch & Zidon, 2014; Valiandes, 2015), more specifically, in writing courses (Ismail, 2019; Massaad & Lee, 2020; Shea, 2015). Many researchers (Ismail, 2019; Massaad & Lee, 2020; Ortega et al., 2018; Ozer &Yimaz, 2018; Shea, 2015; Turner et al., 2017) supported the use of differentiation as a way of meeting the needs of academically diverse learners in today's classrooms. Similarly, the existing local researchers (Abate, 2013; Abraham, 2019; Abraham et al., 2022; Tadesse, 2015; Tadesse & Sintayehu, 2022; Yirgalem, 2022; Zewude, 2019, 2020) also suggested differentiation as an effective teaching instruction in the Ethiopian context. Despite the prevailing dominance of research on DI, most research works seem to focus on finding some forms psychological constructs such as students' and teachers' attitudes and perceptions toward the instruction.

While differentiation is considered to be an effective means of teaching in mixed-ability groups, most of the previous studies were conducted on specific groups of students, gifted students, and students with disabilities (Rock et al., 2008; Valiandes, 2015), or focused on the implementation of differentiation and teachers' psychological constructs such as perceptions, knowledge, and attitudes towards differentiation (Subban, 2006; Tomlinson, 2001). Only a small number of studies

investigated the effectiveness of differentiation on the whole and under specific condition, showing the precedence in academic outcomes of students that were taught using differentiation (McAdamis, 2001; Valiandes, 2015). In addition, much of the available studies were conducted in primary and secondary school levels, less attention has been given at higher institutions (Dosch & Zidon, 2014; Lightweis, 2013; Santangelo & Tomlinson, 2009). Since there is a dearth of research on DI in higher education, further research is required to determine how this teaching strategy affects university students' academic performance. Therefore, this study aims to fill the gaps in literature by investigating the impact of differentiated instruction on EFL students' academic writing skills at higher educations in Ethiopia.

Concerning local studies, few empirical studies were conducted to investigate the effectiveness of differentiated instruction in elementary and secondary schools. For example, Abate (2013) studied the effects of differentiated instruction on students' vocabulary achievement and their attitudes toward the instruction. The result indicated that differentiated instruction improved the students' vocabulary achievements and their attitudes towards learning vocabulary. Similarly, Zewde (2020) carried out a study to examine how differentiated teaching affected the reading fluency and attitudes of primary school pupils about learning to read. The findings indicated that differentiated instruction improved students' reading fluency and their attitudes toward learning reading comprehension. The benefits of differentiated instruction on students' academic performance and attitudes were empirically supported by the aforementioned researchers (Abate, 2013; Zewde, 2020). In the same vein, Yirgalem (2022) examined the impacts of differentiation on students' grammatical accuracy and perceptions. The result showed that differentiated instruction improved students learning achievements. Moreover, the findings demonstrated that students' views of differentiated instruction methods for learning English grammar were positive.

The aforementioned researchers (Abate, 2013; Yirgalem, 2022; Zewde, 2020) who conducted empirical studies confirmed the positive outcomes of differentiated instruction on students' academic achievements and attitudes. The local researchers mentioned above, however, only looked at elementary and secondary schools. Moreover, the aforementioned researchers carried out an experimental and control groups. The current study used an interrupted time series design to examine the effects of differentiated instruction on students' academic writing performance. Furthermore, none of the studies described above

looked at how differentiated instruction affected university-level students' success in writing.

Since writing is crucial for expressing one's ideas, thoughts, opinions, and attitudes in both academic and general areas, it is also chosen as the experimental setting because it is impossible to evaluate the effectiveness of an educational strategy in a vacuum. At the tertiary level, where English is the medium of instruction in Ethiopia, composing essays, term papers, reports, and other academic writing requires a practical writing skills. In this regard, Coffin et al. (2003, p.2) noted that "students' academic writing is the heart of teaching and learning in higher education" because students are mainly assessed by what they write ,and need to learn both general academic conventions as well as disciplinary writing requirements to be successful in higher education. Despite the role that academic writing skills plays over all academic success in the areas of the entire curriculum, most students at tertiary levels are unable to express themselves in writing (Abiy, 2013; Achamyeleh, 2019; Bantalem, 2021; Dawit, 2011; Eskinder, 2018; Meseret, 2012). Bekele (2011) and Dawit (2011) pointed out that several employing organizations have expressed discontent with the writing abilities of recent graduates looking employment. In addition, Achamyeleh (2019) on students' writing performance utilizing the process-genre approach found that students had minimal problems in some aspects of writing ability, but they had serious difficulties in terms of linguistic accuracy. He added that they had trouble controlling grammatical structures, spellings, vocabularies and punctuations. Eskinder (2018) found essentially the same patterns of results as Achamyeleh (2019) investigating the effects of process–genre approach on EFL students writing ability. According to his report, the process genre approach had significant effect on the different aspects of writing except for mechanics. Findings of the previous studies showed that significant work is needed to assist pupils in developing their writing skills.

The poor writing performance of the students might be due to different reasons. However, the researcher of this study feels that using traditional or one-size-fits-all instruction in writing class might partly affect students' writing performance. In support of this idea, Ernst & Ernst (2011) provided evidence by pointing out that one-size-fits-all pedagogical approaches dominate higher education instruction, which is detrimental to varied pupils.

Since there is a dearth of research on DI in higher education generally and in Ethiopia specifically, more study is required to determine

how this teaching strategy affects the academic performance of undergraduate students. Therefore, this study was conducted to investigate the impact of differentiated instruction on EFL students' academic writing performance at higher education levels. For the purpose of this study, the following research question was posed: What is the impact of a differentiated instructional approach on students' academic writing skills?

Materials and Methods

Research Design

This study was aimed to investigate the impacts of differentiated instructional approach on students' academic writing skills. The research design of the study was quasi-experimental that was employed interrupted time series design with single group participants. A single-group quasi-experimental design was chosen to study an effect in a group of participants because it alleviates data contamination between groups and regulates other extraneous variables (Stevens, 2009). In this study therefore, single-group quasi-experimental design was employed to investigate the impact of differentiated instructional approach on students' academic writing performance.

Participants of the Study

The participants of the study were third-year undergraduate English major students who were taking the course "Advanced Writing Skills I" at Assosa University. There were two sections of third-year English department students in the university. The researcher selected one section using a lottery method. All of the 27 students were selected using a comprehensive sampling technique. A focus group discussion was held with nine randomly chosen students from each of the high achievers, average achievers, and low achievers (HAL) groups. English major students were targeted because they had completed at least three writing courses throughout their three years of full time study. This means that they were more familiar with the many types of writing that needed to be produced at the university level.

Instruments

To gather data on the impacts of differentiated instruction on students' academic writing skills, test, focus group discussion, and students' reflective journal were used. The test has comprised pretests and posttests, and was used to obtain data on the students' academic writing performance before and after the intervention. In contrast, focus group

discussion and students' reflective journals were used to triangulate test results. Essays of a general pre-tests were given for sample students before the intervention. The purposes of the general pre-tests were twofold. First, it enabled the researcher to establish a baseline for comparisons. Second, it also helped the researcher to know the students' current knowledge (skills) level; thereby students were divided into three groups according to their achievements: high achievers, average achievers, and low achievers (HAL).

Accordingly, the pre-tests were given before the interventions. Following the pre-tests, as the study was a time series design; three similar, not identical tests were administered along with the intervention. Each of the continuous tests was administered weekly starting from the end of the first week up to the end of the last six weeks. The students' essays were evaluated by two experienced English language university teachers using the British council international English language testing system (IELTS) writing task-2 descriptor. Task descriptor incorporated task achievement, coherence and cohesion, lexical resource, grammatical range, and accuracy (British Council, 2018). Before the evaluation, training on the use of the rubric was given to the raters. Inter-rater reliability was calculated with the Pearson's correlations, and it was found to be 0.78 which shows that it was reliable.

The focus group discussion was conducted with nine students to collect qualitative data from the student's perspectives on developing their academic writing skills. A focus group discussion was held with nine randomly chosen students from each of the HAL groups. The face validity of each item was checked by two English-language university teachers and the supervisors. In the same way, a student reflective journal was used to gather data on the effectiveness of differentiated instruction in developing students' academic writing skills. The face validity of the each question items was checked by two English-language university teachers and the supervisors. Accordingly, the students have reported their thoughts on the effectiveness of the instruction and their improvements during the intervention.

Procedures

Before the whole data collection process, all the instruments in this study were designed and validated. The teaching material was prepared using the literature per the differentiated instruction in line with the objectives of the course advanced writing skills (Enla, 304). Accordingly, out of the four types of essay writing, argumentative writing, which is one

unit of the course advanced writing skills, was selected. In any class, students' readiness for particular skills is often varied. So, it may seem not easy to satisfy the needs of different students, teaching to their strengths with the activities designed to produce the best results for each of them, yet we also want to address our teaching to the group as a whole (Harmer, 1991). Consequently, teachers will find it difficult to consistently find single tasks that are moderately challenging for all students in a class that includes a range of readiness and experiential levels unless the teachers differentiate tasks accommodate all levels of learners and let them to practice skills (Tomlinson, 1999; Hall, 2002). Hence activities were differentiated (tiered) based on students writing ability levels. There were a balance between student selected and a teacher assigned tasks and working arrangements. Moreover, the teaching material was modified in each session by exploring students' readiness levels. Based on the evaluation criteria established by the researcher, the teacher-researcher continuously assessed each student's progress. To this effect, the teaching materials were differentiated in the way that students exhibited coherent and compelling writing that enabled them to use language structures from simple to complex. Bloom's model is helpful for examining and differentiating the challenge level of the activities that are appropriately rigorous, relevant to the essential curriculum, and sufficiently complex (Heacox, 2009).

Following the learning material preparation, essay writing pre-tests were given to the sample students. The pre-test question items entails two different productive response test format as suggested by (Brown, 1996). Based on students' pre-tests achievements, they were divided in to three groups as HALs. The cutoff-points of the groups were decided TOEFL based tests of English as a foreign language ability measures. According to the TOEF-based language ability measurements, those students who scored 0-29 are beginners; students who scored 30-40 are elementary; those who scored 41-52 are pre-intermediate; students who scored 53-58 are intermediate; students who scored 59-64 are intermediate plus; students who scored 65-78 are up per intermediate; students who scored 79-95 are advanced, and students who scored 95-100 are proficient levels. Based on students' pre-tests writing score achievements, five students who scored 53% and above were grouped as high achievers, nine students who scored 41% up to 52% were grouped as average, and thirteen students who scored below 40% were categorized as low achievers. Then, the intervention was given by the teacher researcher for six consecutive weeks.

During the intervention, volunteer students specifically, low achievers had taken more credit hours in the learning centers. They took six more credit hours of treatment than the regular classes. The teacher provided writing topics and/or freedom to choose their topics and a model essay. Accordingly, students produced essays following the organization and sentence construction of the given sample essay. Besides, the student-reflective journal was collected side by side while delivering the intervention. Students were given a weekly based three post-tests essay writings which was similar, but not the same with the pre-tests. In order to observe the students' development in their academic writing skills, the post-tests were administered in a weekly time series that was interrupted. Moreover, the weekly based assessments helped the teacher to see the students writing ability level there by differentiate the teaching materials. The results of the students' essays were evaluated by two experienced English language university teachers using the British Council (IELTS) task-2 writing descriptor incorporated task achievement, coherence and cohesion, lexical resource, grammatical range and accuracy (British council, 2018). Finally, the focus group discussion was conducted with nine randomly selected students to gain information on student's views about the effectiveness of using differentiated instruction in academic writing class.

Data Analysis Methods

Quantitative and qualitative data analysis techniques were used since the study employed tests, student reflective journal and focus group discussion. Accordingly, the data which were collected through writing tests were analyzed quantitatively by using one-way repeated measures analysis of variance (ANOVA) (ANOVA) using SPSS-version 26 statistical software. Accordingly, the collected data on students' academic writing performance were examined and identified to common themes including task achievement, coherence and cohesion, lexical resource and grammatical range and accuracy. The data collected through the focus group discussion transcripts and the students' reflective journals were closely examined to identify common themes or topics, ideas, and patterns of meaning. Thus, the qualitative data were coherently presented based on these specific themes, which are the features of academic writing performance.

Results

Students' academic writing performance

To investigate the impacts of differentiated instructional approach on English language students' academic writing skills, data were gathered through pretests and posttests before and after the intervention, respectively. Besides, qualitative data were also gathered through focus group discussions and students' reflective journals. This section presents the results of the present study regarding students' academic writing performance by applying a differentiated instructional approach.

Table 1

Descriptive Statistics

	N	Mean	Std. Deviation
pretest1	27	40.4444	10.48197
pretest2	27	39.4815	10.07041
posttest1	27	42.6667	10.45135
posttest2	27	46.4444	10.34904
posttest3	27	52.1481	10.43921
Valid N (listwise)	27		

In order to investigate the students' academic writing performance, descriptive statistics were run. As a result, table 1 shows the possible variations in the mean academic writing performance scores of the students prior to and following the intervention. The mean and standard deviation of the students' academic writing performance test results before the intervention were (pre-test 1, M=40.4444, SD=10.48197; and pre- test 2, M=39.4815, SD=10.07041) which showed that the results have no significant differences between the results of pre-test-1 and pre-test-2, which indicates the reliability of the tests. However, there were mean score differences between each individual. Based on the average means cores of the students' academic writing achievements, five students who scored 53% and above were grouped as high achievers, nine students who scored 41% up to 52% were grouped as average, and thirteen students who scored below 40% were categorized as low achievers.

In order to compare the students' academic writing performance over time, the average mean cores of the pre-tests were compared with posttests as a whole to see their progress over time. Moreover, the average mean scores of each group were compared with posttests to see their progress in their groups through times. Thus, the mean and standard deviation of the students' writing performance post-test scores were (post-test-1, M=42.6667, SD=10.45135; post-test-2, M=46.4444,

SD=10.349004; post-test-3, M=52.1481, SD=10.43921) the results showed increments from time to time. From the descriptive statistical results, we can understand that the students' academic writing performance improved from time to time. In other words, the student's mean scores in the post-tests were greater than those of the pre-tests. It implies that the students' academic writing performance improved after the intervention using differentiated instruction.

Table 2
Mauchly's Test of Sphericity

Measure: Performance							
Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon[b]		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
Test	.225	36.468	9	.000	.589	.651	.250

Tests the null hypothesis that the error covariance matrix of the orthonormal zed transformed dependent variables is proportional to an identity matrix.
a. Design: Intercept
Within Subjects Design: Test
b. May be used to adjust the degrees of freedom for the averaged tests of significance. Corrected tests are displayed in the Tests of Within-Subjects Effects table.

As evidenced by students' writing performance through tests ($F(2.355, 1225.817) = 42.058$, $p<0.05$, there was a significant effect of using differentiated instruction on students' academic writing performance. While the p-value indicated statistically significant effect of differentiated instruction, the magnitude of the effect size was in table 3, tests of within-subjects effects. Per, the effect size of the intervention using differentiated instruction is found to be, partial eta squared, ($\eta p2 = .618$) indicating significant effect as it is greater than the usual cut-off point (0.2).

Table 3

Tests of Within-Subjects Effects

Measure: Performance

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power [a]
Test	Sphericity Assumed	2886.933	4	721.733	42.058	.000	.618	168.234	1.000
	Greenhouse-Geisser	2886.933	2.355	1225.817	42.058	.000	.618	99.052	1.000
	Huynh-Feldt	2886.933	2.605	1108.354	42.058	.000	.618	109.550	1.000
	Lower-bound	2886.933	1.000	2886.933	42.058	.000	.618	42.058	1.000
Error (Test)	Sphericity Assumed	1784.667	104	17.160					
	Greenhouse-Geisser	1784.667	61.233	29.146					
	Huynh-Feldt	1784.667	67.722	26.353					
	Lower-bound	1784.667	26.000	68.641					

a. Computed using alpha = .05

There was a significant main effect of differentiated instruction on students' academic writing performance as evidenced by their achievements throughout tests. As can be observed in table 3, there was a significant effect of differentiated instruction on students' academic writing performance (F (4, 23) =25.95b, p=.000, ηp^2=.618, observed power =1.000). As can be seen in the within-subjects test effects statistics (p=0.000), it is significant since the sig. Value is less than 0.05. Tests, indicates that over all, there is a significant effect of differentiated instruction on students' academic writing performance. In other terms, the one-way repeated measure ANOVA is statistically significant.

Table 4

Multivariate Tests

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[c]
Test	Pillai's Trace	.819	25.950[b]	4.000	23.000	.000	.819	103.802	1.000
	Wilks' Lambda	.181	25.950[b]	4.000	23.000	.000	.819	103.802	1.000
	Hotelling's Trace	4.513	25.950[b]	4.000	23.000	.000	.819	103.802	1.000
	Roy's Largest Root	4.513	25.950[b]	4.000	23.000	.000	.819	103.802	1.000

a. Design: Intercept
Within Subjects Design: Test
b. Exact statistic
c. Computed using alpha = .05

The multivariate tests (*Pillai's trace, Wilk's Lambda, Hotelling's trace, Roy's largest root*) indicated that the overall results across the four levels of tests show significant differences ($p < .05$). As displayed in the table 4, the test result show that an overall significant effect of using differentiated instruction ($p < 0.005$). That is $F(4, 23) = 25.95b$, $p = .000$, $\eta p2 = .819$, observed power $= 1.000$). The result of multivariate test indicated that there was significant difference on students' academic writing performance after applying differentiated instruction. As depicted in the tests of within-subjects effects results refer table 3, the students test mean score showed increments based on time difference, but the difference in all time were not the same. Thus, to identify the difference among each test scores, it was necessary to see the pairwise comparisons (with Bonferroni adjustment) or/and paired samples t-tests.

Table 5
Pairwise Comparisons

Measure: Performance						
(I) Test	(J) Test	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b] Lower Bound	Upper Bound
1	2	.963	.855	1.000	-1.659	3.585
	3	-2.222	1.167	.681	-5.802	1.358
	4	-6.000*	1.165	.000	-9.572	-2.428
	5	-11.704*	1.627	.000	-16.693	-6.715
2	1	-.963	.855	1.000	-3.585	1.659
	3	-3.185*	.938	.022	-6.063	-.307
	4	-6.963*	.897	.000	-9.714	-4.212
	5	-12.667*	1.246	.000	-16.488	-8.845
3	1	2.222	1.167	.681	-1.358	5.802
	2	3.185*	.938	.022	.307	6.063
	4	-3.778*	1.038	.012	-6.962	-.594
	5	-9.481*	1.325	.000	-13.546	-5.417
4	1	6.000*	1.165	.000	2.428	9.572
	2	6.963*	.897	.000	4.212	9.714
	3	3.778*	1.038	.012	.594	6.962
	5	-5.704*	.737	.000	-7.965	-3.442
5	1	11.704*	1.627	.000	6.715	16.693
	2	12.667*	1.246	.000	8.845	16.488
	3	9.481*	1.325	.000	5.417	13.546
	4	5.704*	.737	.000	3.442	7.965

Based on estimated marginal means
*. The mean difference is significant at the .05 level.
b. Adjustment for multiple comparisons: Bonferroni.

The pairwise comparison and the paired samples t-test table 5 carried out multiple comparisons between every possible combination of pairs for the conditions. As stated earlier refer table 3, while the tests of within-subjects effects result showed that there was a significant effect of differentiated instruction on students writing performance, the pairwise comparisons result table 5, presented precisely which pairs of conditions were significantly different from one another. In order to understand whether the comparisons were significant, it was necessary to look at the sig.-column (and the asterisks in the mean difference column). The results are presented under the heading of tests of within-subjects contrast. Accordingly, the first contrast is between the average mean score of pretests and pretest-1 mean scores (*sig=1.000*), *which is* statistically insignificant with ($p < 0.05$).

Although the descriptive statistics mean scores of the students' academic writing achievements increased, there were significant differences between the pretest and posttests only posttest-two and posttest-three. The second contrast is between the average pre-test mean scores and post-test-2 mean scores (*sig=0.01*), which is statistically insignificant with ($p < 0.05$). The third contrast is between the average *pre-tests mean scores and posttest-3 mean scores* (*sig.=.000*), which is statistically significant with ($p<0.05$). Even though the descriptive statistics mean scores of students' writing achievements had shown improvements from time to times as they went learning through differentiated instruction, the significance difference lied on posttest-2 (*sig. = 0.01*) and posttest-3 (*sig.= .000*), with $p < 0.05$.
This implies that the students can improve their academic writing ability by applying differentiated instruction through time.

To sum up, the descriptive statistics result showed that the students' academic writing achievement mean in the posttests were greater than those of the pre-tests, which implied that students' writing performance improved, after applying differentiated instruction. In addition, the results of multivariate tests indicated that the use of differentiating writing instruction in writing classes had significantly impacted on students' writing performance. The within subjects effects also showed that there was a significant effects of the instruction on students' writing performance. In the same vein, the pairwise comparison result also showed that students developed their writing skills from time to time even though the significance difference lied on the last two tests (posttest-2 and posttest-3) with sig. value, (*sig=0.01*), *sig.=.000*) respectively.

In addition, data from the students' focus group discussion also revealed that the application of differentiated instruction in academic writing class helped students to improve their academic writing skills. The students' reported, "We have made several attempts to write a good essay previously, but our essay writing as not practical; however, when our teacher differentiate the contents of writing based on our own choice we become moderately good writers. "Furthermore, the data gained via students' reflective journals also indicated that the students' academic writing skills have been improved due to the implementation of differentiated instruction intervention". In the reflective journals, the students stated that this instructional approach was practical because it allowed them to choose topics based on their readiness levels and interests. One of the students mentioned, "This instructional approach is effective to me because it provides me freedom to choose my topic to

write about". The students viewed that using differentiated instruction in mixed-ability class had enhanced their academic writing skills. Another student replied: "I was less effective in academic writing skills because I was obliged to write about the topic I don't want to write, but after the implementation of differentiated instruction, my writing had improved because I got freedom to choose the topic by myself". Students viewed that their competence to accomplish academic writing tasks improved because they were learning the course differently from the previous experience. Therefore, the overall result of descriptive statistics, a one way repeated measure ANOVA, students' focus group discussions, and students' reflective journal results revealed that applying differentiated instructional approach positively impacted the students' writing skills.

Discussion

This study was designed to examine the impact of differentiated instructional approach on students' academic writing skills performance. Thus, the current study demonstrated that varied instruction is a successful teaching strategy that improves students' learning and gives them access to high-quality education. This suggests that in a mixed-ability classroom, differentiation can be regarded as a practical learning theory. As indicated in table-1, the descriptive statistics results show that students' overall academic achievement improved from time to time throughout tests.

In the first two tests (pre-test 1, M= 39.4815, SD=10.48197; and pre- test 2, M= 40.4444, SD=10.07041*)* which were administered at the very beginning of the interventions respectively. Likewise, the mean and standard deviation of the students' writing achievement scores were (post-test-1, M=42.6667, SD=10.45135; post-test-2, M=46.4444, SD=10.349004; post-test-3, M=52.1481, SD=10.43921) respectively. The result showed that the student's writing performance was improved occasionally as they engaged in differentiated instruction. As evidenced in the descriptive statistics Table 1, students' academic writing test scores increased occasionally that means from post-test-1 to post-test-3 which means that the intervention ensured a substantial change on students' academic writing performance. This result implies that students' academic writing skills improved from time to time after applying differentiated instruction.

Concerning with literature, the finding is similar with various studies (Chien, 2014; Koeze, 2007; McAdamis, 2001; Valiandes, 2015; Santangelo &Tomlinson, 2009; Valiandes et al., 2011; Young, 2015). The finding of this study is consistent with the existing local studies; for instance, Abate (2013) reported that differentiated instruction was effective on students' vocabulary achievement. Likewise (Zewde, 2020) found that differentiated instruction improved students' reading comprehension skills. Other findings of research, particularly in writing courses (Ismail, 2019; Massaad & Lee, 2020; Shea, 2015), differentiated instruction is an effective way to teach students in mixed-ability classrooms to better their writing abilities despite their variances.

Thus, differentiation must continue and be adopted on a broader scale since it improves the quality of academic achievement for all levels. The study's results also revealed that differentiated instructional approach helped students to improve academic writing skills across all levels (HAL) with some degree mean differences which imply that the differentiated instruction ensured equity dimension of effectiveness. This study is congruent with (McAdamis, 2001), who reported that the academic scores of low achievers improved significantly after applying the teaching intervention. Mazen and Malak (2019) found essentially the same pattern of results as (McAdamis, 2001) findings which revealed marked improvement in the low achievers' academic scores following the implementation of differentiated instruction. The results of this study are consistent with the learning theory of differentiation proposed by Tomlinson (1999). Results from quantitative data were further investigated by qualitative data using focus group discussion and students' reflective journal.

Similarly, results from student focus groups discussions showed that students' academic writing performance had been enhanced through the implementation of differentiated writing instruction. The students' in their focus group discussion reported, "We have made several attempt to write a good essay previously, but our essay writing was not practical; however, when our teacher differentiate the contents of writing based on our interests, we become moderately good writers." Likewise, the data gained through students' reflective journal also indicated that the students' academic writing skills had been improved after applying the intervention using differentiated instruction in writing class.

In the reflective journal, the students stated that this instructional approach was effective because it allows them to choose topics based on their readiness levels and interests. One of the students mentioned: "This instructional approach is effective to me because it provides me freedom to choose my topic to write about". The students viewed that using differentiated instruction in mixed ability class had enhanced their academic writing skills. Another student replied: "I was less effective in academic writing skills because I was obliged to write about the topic I don't want to write, but after the implementation of differentiated instruction, my writing has improved because I got freedom to choose the topic by myself". All in all, findings from test, focus group discussion and students' reflective journal showed that learning through differentiated instruction helped students to improve their academic writing ability.

Implications of the study

Even though students' social, cultural, and linguistic backgrounds are diverse, higher education employs a "one size fits all" teaching methodology. Because the two extremes of students: high achievers and the low achievers are not adequately challenged, this approach is unsuccessful method of instruction. Although differentiation is based on the best teaching practices, there is no empirical evidence to support this strategy. The findings of this study could be used as a foundation for future investigations into how differentiation affects students' academic writing abilities. Furthermore, the findings can offer theoretical and practical insights to teacher preparation programs on an innovative approach for teaching languages in general and writing in particular. The insight could assist teacher preparation programs in reconsidering and updating their current language teaching methodology to better suit the academically diverse classrooms of today and preparing their students appropriately. Lastly, the findings might assist other scholars in conducting in-depth research on the same or related subjects.

Conclusions and Future Direction

The purpose of this study was to investigate the impact of differentiated instruction on English major students' academic writing performance at Assosa University. Based on the findings, it would be feasible to conclude that students' academic writing abilities are improved by a differentiated teaching strategy. However, if teachers are realistically considering giving their students the opportunity to learn based on their

individual needs. Additionally, it was determined that successfully implementing differentiated instruction in academic writing classes enhances learning outcomes for students at all levels in a diverse classroom. It is only when teachers consider robust and flexible instruction that students may have the opportunity to excel in meeting the standards. Thus, integrating differentiated instruction in teaching and learning writing skills must be maintained and expanded on a broader scale since all levels of learner's benefits regardless of disparities. As a result, teachers and teacher training programs reconsider how well the current method of teaching languages fits to suit the academically diverse classrooms of today's better.

Limitations of the Study

While this study demonstrated the effectiveness of differentiated instruction, it is not without limitations. One of the limitations of this study was related to sample size. Particularly the sample sizes of high achievers groups petite. As a result, the finding of the high achievers category was not conclusive. Nevertheless, it does not affect the findings of the study since the participants of the study were adequate. For experimental and causal-comparative approaches, Borg and Gall (2003) recommended a minimum sample size of 15 instances. However, the appropriate sample size for a study depends on many factors, including the study's goals, the type of data being collected, and the cost and time constraints. The other limitation of the study was related to the course, was given by the researcher instead of the expert in the field.

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Competing interests

The authors declare that there is no conflict of interests.

References

Abate, D. (2013). The Effects of differentiated instructional approach on students' vocabulary achievement and attitude in EFL classroom. Addis Ababa University. https://www.researchgate.net

Abiy, Y. (2013). High school students' writing skills and their English language proficiency as predictors of their English language writing performance. *Ethiopiopian Journal of education and scinence, 9* (1), 51-60. https://www.ajol.info/

Abraham, D. (2019).Teacher educators' perception and practices of differentiated instruction in Ethiopian secondary school teacher education. *International Journal of Research in Teacher Education, 10* (1):79-93. http://www.eab.org.tr

Abraham, Z., Solomon, M., & Amera, S. (2022). Teacher educators' self-efficacy and perceived practices of differentiated Instruction in Ethiopian primary teacher education programs: Teacher education colleges in Amhara Reginal state in focus. *Cogent Education, 9*(1), 1-22. https://doi.org/10.1080/2331186X.2021.2018909

Achamyeleh, G. (2019). Effects of process-genre approach on students' argumentative genre-performance. *English for specific purposes world, 57*(21), 1-10. www.esp-world.info

Bantalem, W. (2021).Using inquiry-based writing to develop students' academic writing skills. *Asian-pacific Journal of Second and Foreign Language Education, 6*(4), 1-16. https://doi.org/10.1186/s40862-020-00108-9

Bekele, B. (2011). The relationships of self-esteem, attitude and gender to achievement in writing. *The Ethiopian journal of Education, 31*(1), 33-61. http://ejol.ethernet.edu.et/

Borg, R. & Gall, P. (2003). Educational research: Introduction. *British Journal of Educational Studies, 32* (3), 274. DOI:10.2307/3121583

British Council. (2018). *IELTS Task-2 Writing band descriptors*: Public version. https://ieltsimmigration.ir

Brown, J.(1996). *Testing in language programs.* Printice-Hall International. https://evelintampubolon.files.wordpress.com

Chamberlin, M., & Powers, R. (2010). The promise of differentiated instruction for enhancing the mathematical understandings of college *students.* [Teaching Mathematics and its applications] *10*(11), *113-13*.https://doi.org/10.1093/teamat/hrq006

Chien,W. C. (2014). College students' attitude toward and learning of differentiated instruction in products. *Journal of English Langage and Literature 1(2)*, 26-37. DOI: https://doi.org/10.17722/jell.v1i2.5

Coffin, C., Hewings, A., Theresa, M., Lillis, & Swann, J. (2003). *Teaching academic writing.* A toolkit for *higher education*. Routledge, University of London. https://www.routledge.com/

Dawit, A. (2011). Source of efficacy, gender, and performance in the writing skills of government and private school students: A comparative study. *The Ethiopian Journal of Education, 1*(31), 1-31. http://ejol.ethernet.edu.et

Dawit , A. (2014). Effects of the process-genre approach in the classroom-context of writing for professional communication [unpublished doctoral dissertation]. Bahir Dar University. https://sfleducation.springeropen.com

Dewey, J. (1938). *Experience and education*. Macmillan. https://www.scirp.org

Dixon, A., Yssel, N., McConnell, J., & Hardin, T. (2014). Differentiated instruction, professional development and teacher efficacy. *Journal for the education of the gifted, 37* (2), 111-127. DOI: 10.1177/0162353214529042

Dosch, M., & Zidon, M. (2014).The course fit us: Differentiated instruction in the college classroom. *International Journal of Teaching and Learning in higher education, 3*(26), 343-357. http://www.isetl.org/ijtlhe/

Ernst, R. & Ernst, T. (2005). The promise and pitfalls of differentiated instruction for undergraduate political science courses: Student and instructor impressions of an unconventional teaching strategy. *Journal of Political Science Education, 1*(1), 39-59, DOI: 10.1080/15512160590907513

Eskinder, G. (2018). Investigating the effects of process-genre approach on EFL students writing abilities, 9(8), 51-56. *Research on Humanities and social Sciences (online).* www.iiste.org

Fischer, K., & Rose, L. (2001). Webs of skill: How students learn. *Educational Leadership, 3*(59), 6-12. https://www.researchgate.net

Gardner, H. (2011). *Frames of mind. The Theory of Multiple Intelligences*. Basic Books. https://www.scirp.org

Green, F. R. (1999). Brain and learning research: Implications for meeting the needs of diverse learners. *Education, 4*(119), 682-688. https://www.semanticscholar.org

Hall, T. (2002). Differentiated instruction [Effective classroom practices report. National Center on Accessing the General Curriculum, CAST, Special Education Programs]. http://www.cast.org/ncac/

Harmer, J. (1991). *The Practice of English langue teaching*. Longman. https://www.scirp.org

Heacox, D. (2009).Differentiating instruction in a regular classroom: How to reach and teach all learners, grade 3-12. Free Sprit Publishing. https://dl.icdst.org

Ismail, S. (2019). Impact of differentiated instruction on the writing process of ESL learners. *EFL Annual Research Journal, 21*(2011), 130-153. https://www.researchgate.net/

Koeze, A. (2007). Differentiated instruction: The effect on student achievement in elementary school [Doctoral dissertation, Michigan University].ProQuest Dissertation and Theses Global. http://commons.emich.edu/theses

Lightweis, S. (2013). College Sucess: A fresh look at differentiated instruction and other student centered strategies. *College Quarterly, 16*(3), 1-9. https://eric.ed.gov

Massaad, M. & Lee, Y. (2020). Effectiveness of differentiated instruction in business English: The Lebanese Higher education. *International Journal of English Literature and Social Sciences, 5*(3), 796-811. DOI: 10.22161/ijels.53.35

McAdamis, S. (2001). Teachers tailor thier instruction to meet a variety of students needs. *Journal of Staff Development, 22(2):* 1-5. https://files.eric.ed.gov

Meseret, T. (2012). Instructors' and students' perceptions and practices of task-based writing in an efl context [unpublished doctoral dissertation]. Addis Ababa University. https://etd.aau.edu.et

Ortega, P., Cabrera, M., Benalcazar, V. (2018). Differentiated instruction in language learning classroom: Theoretical considerations and practical applications. J*ournal of Language Teaching and Learning, 6*(9), 1220-1228. http://dx.doi.org/10.17507/jltr.0906.11

Oxford, R. (1990). *Language learning strategies:* What every teacher should know. Newbury House/Harper & Row. https://www.scirp.org

Ozer, S. & Yimaz, E. (2018). The effect of thinking-style-based differentiated instruction on achievement, attitude, and retention. *Kastmonu Education Journal, 1*(26). 12-20. https://www.researchgate.net

Pham, H.(2012). Differentiated instruction and the need to integrate teaching and practice. *Journal of College Teaching & Learning, 9*(1), 13-20. https://eric.ed.gov/?id=EJ979186

Rock, M., Gregg,M., Ellis,E., & Gable, R. A. (2008). A framework for differentiating classroom instruction. *Preventing school failure, 2*(52), 31-47. https://libres.uncg.edu

Rodriguez, A. (2012). Analysis of elementary school teachers' knowledge and use of differentiated instruction [doctoral dissertation, Olivet Nazarene University].ProQuest dissertation databases and Theses Global. https://digitalcommons.olivet.edu/

Savage, M. (2011). Exploring the relationship between differentiated instruction and student performance [unpublished doctoral dissertatin]. East Carolina University. https://thescholarship.ecu.edu

Shea, M. (2015). Differentiating writing instruction: Meeting the diverse needs of Authors in a classroom. *Journal of Inquiry and action in Education, 2*(6), 80-118. https://files.eric.ed.gov

Solomon, M. (2019). Instructors' knowledge, attitude and practices of differentiated instruction,*1(*1),1-12. https://doi.org/10.1080/2331186X.2019.1642294

Stavroula, V. A. (2011, January 2011). Investigating the impact of differentiated instruction in mixed ability classrooms [Its impact on the quality and

equity dimensions of educational effectiveness, International congress for school effectiveness and improvement,USA]. https://www.researchgate.net

Stevens, J. P. (2009). *Applied Multivariate Statistics for the Social Sciences (5th ed.)*. University of Cincinaty. https://www.taylorfrancis.com

Subban, p. (2006). Differentiated instruction: Aresearch basis. *International Educational journal*, 7(7), 935-947. http://www.aare.edu.au/.

Tadesse, M., & Sinatayehu, B.| (2022). Differentiating instruction in primary and middle schools: Does variation in students' learning attributes matter?, *Cogent Education.*DOI: 10.1080/2331186X.2022.2105552

Tadesse, M. (2015). Differentiated instruction, perceptions, practices and challenges of Primary school teachers. *Sci. Technol. Arts Res. J.*,*4*(3), 253-264. http://dx.doi.org/10.4314/star.v4i3.37

Tomlinson, C.A. (1999). *The differentiated instruction classrooms.Responding to the needs of all students.* USA: Association for suppervision and Curricular Development.https://www.scirp.org

Tomlinson, C.A. (2001). *How to differentiate instruction in mixed-ability classroom(*2nd ed.). USA: Aleandria, Virginia. https://www.scirp.org

Tomlinson, C.A. (2003).Differentiation in Practice. A responsive guide for differentiating curriculum. Association for supervisions and curriculum development. https://www.google.com

Tomlinson, C., & David, A.(2011). Differentiation in the Brain. How Neuroscience Supports the Learner-Friendly classroom. Solution Tree Press. https://www.scirp.org

Santangelo, T & Tomlinson, C. (2009). The Application of differentiated instruction in post secondary environments: Benefits, challenges, and future Directions. *International Journal of Teaching and Learning, 20*(3), 307-323. *http://www.isetl.org/ijtlhe/*

Turner, D., Solis, J., & Kincade, H. (2017). Differentiated instruction in higher education. *International Journal of Teaching and Learning in Higher Education, 3* (29), 490-500. https://www.researchgate.net/

Valiandes, S., Koutselini, M., & Kyriakides, L. (2011, January).Investigating the impact of differentiated instruction in mixed ability classrooms [its impact on the quality and equity dimensions of education effectiveness, international congress for school effectiveness and improvement]. https://www.researchgate.net

Valiandes, S. (2015). Evaluating the impact of differentiated instruction on literacy and reading in mixed ability classrooms: [Quality and equity dimensions of education effectiveness, stueduc, *45*, 17–26. https://doi.org/10.1016/j.stueduc.2015.02.005

Vygotsky, L. (1978). *Mind in society:* The development of higher psychological processes. Harvard University Press. https://www.jstor.org

Yirgalem, G. (2022). Students' perceptions about differentiated instruction in learning English grammar. *East African Journal of Education Studies, 5*(1), 246-253. DOI:10.37284/eajes.5.1.636

Young, A. (2015). Student oral proficiency in grade three Spanish immersions: Linguistic diversity student interaction and differentiated scaffolding [unpublished doctoral dissertation].University of Minnesota. https://conservancy.umn.edu

Zewude, T. (2019). English language teachers' perceptions and actual classroom practices of differentiated instruction: General secondary and preparatory school in focus. *The Ethiopian Journal of Social Sciences and Language Studies (EJSSLS), 6*(1), 77-95. http://journals.ju.edu.et/

Zewude, T. (2020). Effects of differentiated instruction on students' reading comprehensions and fluency [unpublished doctoral dissertation], Bahir Dar University. https://www.researchgate.net